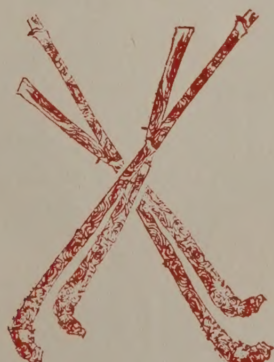
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§180. **Sticta Wrightii** Tuckerman, Amer. Journ. Arts & Sci., Ser. 2, **28** (No. 83): 366. 1859.

Ricasolia Wrightii Nyl., Synop., 366. 1860.—Krempelhuber, Flora, **1862**: 441.

Sticta Miyoshiana Müll. Arg., Flora, **1891**: 111.

Sticta Yasudae Vain., Bot. Mag. Tokyo, **35**: 64. 1921.



Fig. 1. Type specimen of *Sticta Wrightii* Tuck.
a & a'. Lectotype. b & b'. *Sticta insinuans* Nyl.

* 資源科学研究所 Research Institute for Natural Resources, Shinjuku, Tokyo.

Thallus K–; medulla K+mox fulvescens, C–, PD–.

Long time ago Zahlbruckner[1] identified two specimens collected in Formosa with *Sticta Wrightii* Tuck. But these specimens do not coincide with the Tuckerman's description, that *St. Wrightii* possesses "the general aspect of *Sticta glomerulifera*". I am of opinion that these Formosan specimens must be referred to *Sticta Nylanderiana* Zahlbr. (=*St. platyphylla* Nyl.). According to Tuckerman, *Sticta Wrightii* was colected by C. Wright growing "on beech trunk, mountain side, Hakodadi[2], Japan" during the voyage of the U. S. North Pacific Exploring Expedition, 1853–56. Afterwards Nylander changed its generic name, and called it *Ricasolia Wrightii* Nyl. His description of this species must have been made on the basis of the specimen sent by Tuckerman. Moreover *Sticta Wrightii* is an interesting species, as it occurs also in a few localities of Europe. When Krempelhuber identified the specimens collected by Rauchenberger in the forest of Berchtesgaden (Bavaria) with *Ricasolia Wrightii* Nyl., he expressed his surprise saying "Wie lässt sich aber das sporadische Auftreten dieser Flechtenart an zwei so weit entfernten Orten, wie Berchtesgaden und Japan sind, erklaren?"

To get more accurate knowledge about *Sticta Wrightii* Tuck., I turned to Dr. M. Lamb[3] for help, who was kind enough to send me its type specimen on loan. At first sight of the type specimen, I was greatly surprised to find that it was composed of two different species. The larger part (Fig. 1, a and a′) is nothing but *Sticta Miyoshiana* Müll. Arg. and smaller fragments b and b′ are of *Sticta insinuans* Nyl. The specimens a and a′ are sterile, while the fragment b bears a few apothecia. Müller Arg. remarked in his description of *Sticta Miyoshiana* "Prope *Sticta Wrightii* Tuck. locanda est, a qua indumento partium et sporis elongatis multo tenuioribus differt". But he did not pursue the problem thoroughly.

To decide the lectotype between these two species, it seems, at first, to be convenient to select b and b′, as they are fertile. But for the following reason I prefer the sterile part a and a′ (*Sticta Miyoshiana*) to b and b′ (*Sticta insinuans*).

In connection with the type specimen of *Sticta Wrightii*, I requested Prof. H. des Abbayes to let me examine Nylander's specimens, which come into contact with the subject. Also I appreciate the favor done by Dr. J. Poelt (Munich) in

1) Fedde, Repert., **33**: 32. 1933. Specimens no. 376, leg. Ogata, no. 34, leg. Asahina.

2) A local corruption of "Hakodaté".

3) The author is also grateful for his cooperation in sending him the manuscript of the original description of Tuckerman.

sending me on loan related specimens of Krempelhuber, preserved in the Staatsherbarium Munich. Nylander's specimens consisted of four packages, two of them were of Bavarian and the rest of Japanese origin—the latter evidently sent by Tuckerman to Nylander and identical with the part a and a′, but not with the part b and b′ of the type specimen.

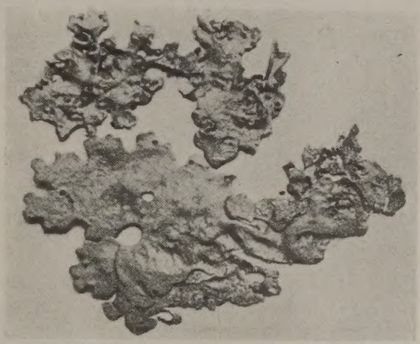


Fig. 2. Fertile fragments of *Sticta Wrightii* Tuck. preserved in the Nylander's herbarium, Botanical Museum Helsinki, undoubtedly sent to Nylander by Tuckerman.

In Munich specimens contained two Exsiccata-samples: Herbarium Lichenum Fenniae. Fac. I (1875). 35. *Ricasolia Wrightii* (Tuck.), In Karelia Onegensi etc. legerunt Th. Simming et J. P. Norrlin, 1863–1870. —H. Lojka: Lichenotheca Universalis. Fasc. II (1885) *Ricasolia Wrightii* (Tuck.) Nyl. in cortice *Aceris* prope Berchtesgaden in Bavaria. Leg. Rauchenberger) — transferred from Arnold's herbarium. Three other Bavarian specimens were all collected by Rauchenberger in Berchtesgaden. The most important event is the presence of a Japanese fertile specimen among Munich collection, transferred from Arnold's herbarium. It is labelled "*Sticta Wrightii* T. ad fagum in montibus Hakodadi, Japonia. Leg. C. Wright". Another fertile fragments of *Sticta Wrightii* of the same origin are preserved in the Nylander's herbarium, Botanical Museum Helsinki. (cf. Fig. 2).[4] The external aspects of these specimens coincide very well with that of *St. Miyoshiana* Müll. Arg. and the presence of apothecia is an infallible evidence, that Tuckerman himself was acquainted with fertile thalli, though the type specimen is deprived of fertile part.

In the taxonomy of the genera *Sticta* and *Lobaria* their thalline reactions are very often taken into consideration. In that case a careful management is required. For example the K reaction carried out directly on the thallus is often misleading,

4) I am greatly indebted to Dr. Ahti and Dr. Roivoinen, who let me examine the specimens in question on loan.

especially when the specimen in question is an old one. But by a technique one finds his way out of this difficulty. A wet spot caused by dropping KOH-solution on the thallus of a *Sticta* or *Lobaria* species is absorbed by a narrow strip of white filter paper and observed its coloration. If a durable yellow color appears instantly, then the reaction is called K+yellow. If the alkali wet paper strip remains for a few minutes colorless, the reaction is called K-. But in that case the alkali wet paper becomes gradually more or less reddish brown. This is due to a substance very sensitive towards atmospheric oxygene, giving within a short time reddish brown coloration. These substances contained in *Sticta* and *Lobaria* seem to belong to tannoids, neither atranorin, nor depsides nor depsidones. Also several species of *Sticta* and *Lobaria* reveal C+reaction in the medulla (presence of gyrophoric acid !). If the content of gyrophoric acid is very small and not uniformly distributed, the C reaction becomes negative. But even in that case K C reaction may become positive, because at first alkali solusion dissolves gyrophoric acid from remote places and its concentration becomes sufficient enough to react with C. Here a positive K C reaction does not mean the presence of a depsidone of lobaric acid type. Of course, there are many cases, in which K C reaction is wholly negative, as in the case of the lectotype of *Sticta Wrightii* Tuck. (total absence of gyrophoric acid).

Nylander[5] gave the thalline reaction of *Ricasolia Wrightii* as K+. How he judged the reaction, was not described in detail. Perhaps he recognized the rather indefinite color spot on the thallus. By the method described above the thalline reaction of the type specimen *Sticta Wrightii* is K- or faintly reddish brown but not yellow. Some fragments of the Bavarian specimens gave a weak thalline reaction K+yellow. Also I have tested 40 Japanese specimens of *Sticta Miyoshiana* Müll. Arg. and found 6 specimens, which revealed to be K+(15%). Here I lay no important taxonomical weight on this reaction K+.

I take this occasion to mention that the part b, b′ of the type specimen of *Sticta Wrightii* Tuck. gives the reactions: thallus K- (afterwards becoming faintly brownish); medulla C+faintly rose, KC+distinctly rose.

§ 181. **Parmelia** (Xanthoparmelia) **seto-maritima** Asahina, nov. sp.

Parmelia Mougeotii (non Schaer.) Nyl. in Lich. Jap., 28.

Thallus parvus, orbicularis vel irregulariter expansus, plagas ad 1cm latas formans, demum thallis vicinis confluentibus compositus, tum plagas usque ad 3 cm

5) Flora, **1869**: 314.

latas formans, flavo- vel cinereo-viridescens, in medio areolatus, areolis 0. 4–0. 6 mm latis, isidiatus, isidiis globosis minutis, ±0. 1 mm latis, apice nigricantibus, esorediatus, in peripheria radiato-laciniatus; laciniae 1. 0–1. 5 mm longae, 0. 6–0. 9 mm latae, nitidulae, ambitu obscuratae, contiguae vel ±imbricatae, arcte adpressae; intus albus; subtus fuscus, hyphis concoloribus, stuppeis substrato affixus, erhizinosus. Apothecia et pycnidia non visa. Ad saxa quartzona.

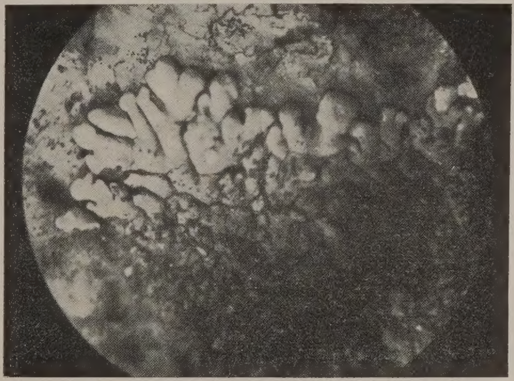


Fig. 3. *Parmelia seto maritima* Asahina. ×10

Thallus ca 150μ crassus; cortex superior ca 9μ crassus, amorphus; stratum gonidiale 25–30μ crassum, gonidia globosa, cellulis 6–7. 5μ latis; cortex inferior 10–15μ crassus, hyphis ca 3μ latis fuscis laxe contextis.

Reaction.: th. K fere—; med. K+leviter flavens, C—, PD+miniato-rubens.

Mat. chim. propr.: acidum usnicum, acidum sticticum et acidum norsticticum.

Typus: Insula Hiroshima, vis-a-vis Marugame, Shikoku. No. 61511, leg. M. Togashi 1961, in herbario meo.

Nylander registered in his Lichenes Japoniae (1890) *Farmelia Mougeotii* Schaer., based on a specimen collected by Almquist, a lichenologist on board of "Vega", in an islet Hiroshima[6] in the Inland Sea (Seto-Naikai), lying ca 10 kilom. northwest off Marugame, a town on the northern coast of Shikoku. *Parmelia Mougeotii* is one of the doubtful species in the lichen flora of Japan, as it has since then never been found in Japan. Occasionally on the study of Parmeliae[7] registered in Nylander's Lichenes Japoniae, I found a specimen no. 34664: *Parmelia Mougeotii* Schaer. with a minor colony of *Lecidea atroalbella* Nyl. The substratum

6) Not "Hiroshima", which suffered the atom-bomb destruction in the World War II.

7) I am greatly indebted to Mr. Ahti, who was kind enough to arrange and send me these valuable specimens of Vega collection, preserved in the Botanical Museum, University of Helsinki on loan.

is a piece of granite, 5×2 cm large, labelled with a note—Japonia, Hiroshima. E. Almquist 1879. This Vega specimen lacks tuberculose soralia, which are so characteristic in the European specimens of *Parmelia Mougeotii*. Recently on my request Mr. Togashi has searched for the specimens in question in the type locality. In spite of the lapse of more than 80 years, in the course of which the natural scenery of the islet must have undergone a considerable change, Mr. Togashi was lucky enough to collect a lot of specimens, referable to the present problem. Wholly developed Togashi specimen, which I call *Parmelia seto-maritima* Asahina possesses no soredium, but plenty of isidia and its laciniae are at the circumference contiguous or even imbricate and not ± discrete as in the case of *Parmelia Mougeotii*.[8] The Vega specimen no. 34664 is a young plant of this new species and almost free from isidia, but its transition to the wholly developed *P. seto-maritima* may be well demonstrated by the Togashi collection. Mr. Togashi collected also this new species in the site of the old castle of Marugame, by which its area is extended to the main land of Shikoku.[9]

□Hatton, R. G.: **handbook of plant and floral ornament from early herbals** pp. 539 figs. 1014+57 (1960) Dover Publications, New York $2.98 これは英国で1909 にでた The Craftman's plant-book の覆刻判である。主に植物をテーマとするデザインの資料として出版されたのであるが，16 世紀に出た主な西洋の本草書から抜萃した植物の画が千余り並べてあるので，其等をみくらべてみると中々楽しい。第1 章の本草書の解題や第6章の分類篇（これは Lindley の System であるが，このごろの Engler 以外の分類系の根源の一つであるから温古知新の意味で面白い。上記の図はこの分類順に並べてある）など植物専攻家にも参考になるであろう。上製紙で装釘はしっかりしていてしかも開き易いと自慢しているだけに簡単な装釘ながらよくできている。　　(前　川　文　夫)

8) I take this occasion to put the chemical ingradients of *Farmelia Mougeotii* Schaer. on record. Material leg. Dr. Vayhinger in Purbenhalde, Schramberg, Wurttemberg in 1892 contains usnic, stictic and norstictic acids—the same ingredients as in *Farmelia seto-maritima* Asahina.

9) After the completion of the above manuscript, I found, quite unexpectedly, a small specimen of *Parmelia seto-maritima* Asahina (substratum sandstone) among an undetermined collection of Mr. Fujikawa, who collected it (1931) at Kubotsu, a village near Cape Ashizuri, Prov. Tosa. This fact indicates the occurrence of this species may be anticipated also along the Pacific coast of Shikoku.

鈴木静夫*: 日本産の水生菌類目録

Shizuo SUZUKI*: A list of the aquatic Phycomycetes in Japan

わが国の水生菌類については，いままでに永井政次，伊藤健，印東弘玄，小林義雄，大久保真理子らによって，フロラ的な研究が行なわれたが，それもごく一部の地域に限られ，その分布に関してはいまだ不明な点が極めて多い。著者は 1954 年から本邦陸水の水生菌類の生態学的な研究を行なってきたが，その結果水生菌類の分布に関して多くの新産地を加えることができた。そこで，いままでの研究者の調査結果をも含めて，日本の水生菌類のうちミズカビ科 Saprolegniaceae の種類分布について記すこととする。

順序は学名の ABC 順とし，産地は北から南に及ぶ。かっこの中に報告者の名を入れたもの以外は全部著者の採集である。

この研究に対して指導と助言をいただいた東京教育大学の印東弘玄，伊藤洋両教授，市村俊英講師ならびに東京理科大学の辰野高司教授に感謝する。

1, *Achlya americana* Humphrey in Trans. Amer. Phil. Soc. II **17**: 116(1893). 北海道琴似，篠路，大沼（いずれも永井)；青森県上毛無，下毛無(いずれも大久保)；福島県乙女沼；群馬県広沢沼；尾瀬ガ原（小林・大久保)；栃木県日光戦場ガ原；茨城県中沼；神奈川県下震生湖；山梨県山中湖，本栖湖。

2. *Achlya apiculata* de Bary (var. *apiculata*) in Bot. Zeit. **46**: 635 (1888). 青森県長沼(大久保)，蔦沼(大久保)。

2a. *Achlya apiculata* de Bary var. *prolifica* Coker et Couch in Coker, Saprolegniaceae: 127 (1923). 栃木県日光戦場ガ原。

3. *Achlya conspicua* Coker, Saprolegniaceae: 131 (1923). 青森県睡蓮沼(大久保)；群馬県尾瀬ガ原(小林・大久保)。

4. *Achlya flagellata* Coker (var. *flagellata*) Saprolegniaceae: 116 (1923). 北海道琴似，篠路，札幌，大沼，美唄，ビエイ，膽振，士別，ピウカ，静内(いずれも永井)；青森県石川村(永井)；山形村(永井)；秋田県旭日村(永井)；宮城県長岡村(永井)；福島県毘沙門沼，弁天沼，横沼，姫沼，桧原湖，上の池，田代池；群馬県城沼，広沢沼，覚万淵，栃木県湯の湖，日光戦場ガ原，逆川；茨城県中沼，切所沼；千葉県手賀沼；東京都占春池(印東)；神奈川県下震生湖；埼玉県荒川，クシ沼；長野県長湖，丸池，木戸池，鎌ガ池，八島ガ池，長池，一沼，上の小池，四十八池；山梨県山中湖，本栖湖；新潟県苗場山湿原；宮崎県六観音御池。

4a. *Achlya flagellata* Coker var. *yezoensis* Ito et Nagai in Journ. Fac. Agr.

* 東京理科大学薬学部微生物化学教室. Department of Microbial Chemistry, Faculty of Pharmacy, Tokyo College of Science, Ushigome, Tokyo.

Hokkaido Imp. Univ. **32**: 22 (1931). 北海道札幌，琴似，野幌；青森県山形村；宮城県長岡村；福島県カンザシ；栃木県宇都宮；新潟県長岡(いずれも永井)。

5. *Achlya flexuosa* Nagai in Journ. Fac. Agr. Hokkaido Imp. Univ. **32**: 18 (1931). 北海道札幌(永井)；東京都占春池(印東)。

6. *Achlya imperfecta* Coker, Saprolegniaceae: 118 (1923). 京都府京都(伊藤)。

7. *Achlya klebsiana* Pieters in Bot. Gaz. **60**: 486 (1915). 青森県八甲田上毛無，下毛無；千葉県印旛沼(いずれも大久保)。

8. *Achlya megasperma* Humphrey in Trans. Amer. Phil. Soc. **17**: 118 (1892). 北海道琴似，野幌(いずれも永井)；群馬県烏川；埼玉県荒川。

9. *Achlya oblongata* de Bary in Bot. Zeit. **46**: 646 (1888). 北海道琴似，上手稲，札幌(いずれも永井)；青森県睡蓮沼(大久保)；福島県柳沼；長野県丸池；山梨県山中湖。

10. *Achlya oligocantha* de Bary in Bot. Zeit. **46**: 647 (1888). 青森県蔦沼，下毛無(いずれも大久保)。

11. *Achlya oryzae* Ito et Nagai in Journ. Fac. Agr. Hokkaido Imp. Univ. **32**: 17 (1931). 北海道琴似，札幌，篠路，大沼，アサベ，野幌，稚内，後志(いずれも永井)；青森県睡蓮沼(大久保)，蔦沼(大久保)，山形村(永井)；群馬県尾瀬ガ原(小林・大久保)；栃木県宇都宮(永井)；滋賀県琵琶湖(伊藤)；京都府京都(伊藤)。

12. *Achlya papillosa* Humphrey in Trans. Amer. Phil. Soc. **17**: 125 (1892). 北海道野幌(永井)。

13. *Achlya proliferoides* Coker, Saprolegniaceae: 115 (1923). 青森県八甲田上毛無，下毛無(いずれも大久保)；群馬県尾瀬ガ原(小林・大久保)。

14. *Achlya racemosa* Hildebrand in Jahrb. Wiss. Bot. **6**: 249 (1867). 北海道琴似，上手稲，札幌，ピエイ，後志，北見(いずれも永井)；青森県睡蓮沼，長沼，上毛無(いずれも大久保)；福島県深泥沼，龍沼，横沼，水藻沼，姫沼，奥の池；群馬県榛名湖，粕川，尾瀬ガ原(小林・大久保)；茨城県牛久沼，中沼，千葉県手賀沼，印旛沼；埼玉県荒川；東京都占春池(印東)，秋川；神奈川県下震生湖；山梨県山中湖；京都府京都(伊藤)。

15. *Aphanomyces helicoides* von Minden, Krypt. Flora Mark Brandenburg **5**: 559 (1912) 京都府京都(伊藤)。

16. *Aphanomyces laevis* de Bary (form. *laevis*) in Jahrb. Wiss. Bot. **2**: 179 (1859). 群馬県赤城大沼，阿左美小沼，阿左美大沼，水蓮池(小林・大久保)；東京都占春池，石神井池；長野県渋池，下の小池，鵜取池，長湖。

16a. *Aphanomyces laevis* de Bary form. *keratinophilus* Ookubo et Y. Kobayasi in Mycol. Journ. Nagao Inst. **5**: 5 (1955). 長野県野尻湖(大久保)；京都府京都(大久保)。

17. *Aphanomyces scaba* de Bary in Jahrb. Wiss. Bot. **2**: 178 (1860). 長野県上の小池。

18. *Aphanomyces stellatus* de Bary in Jahrb. Wiss Bot. **2**: 178 (1860). 北海道ビエイ(永井)；福島県西柳沼，深泥沼，龍沼，横沼，姫沼，川上青沼；栃木県蓼の湖；長野県鵜取池，松原湖。

19. *Aplanes braunii* de Bary in Bot. Zeit. **46**: 650 (1888). 青森県睡蓮沼(大久保)；福島県山見池，奥の池；群馬県尾瀬ガ原(小林・大久保)；長野県大沼池，四十八池；新潟県苗場山湿原。

20. *Aplanes ozeensis* Y. Kobayasi in Journ. Jap. Bot. **27**: 181 (1952). 青森県八甲田下毛無(大久保)；群馬県尾瀬ガ原(小林・大久保)。

21. *Aplanes treleanus* Coker, Saprolegniaceae: 79 (1923). 福島県赤泥沼。

22. *Calyptoralegnia* achlyoides Coker et Couch in Journ. Elisha Mitchell Sci. Soc. **42**: 219 (1927). 茨城県中沼；東京都占春池。

23. *Dictyuchus anomarus* Nagai in Journ. Fac. Agr. Hokkaido Imp. Univ. **32**: 28 (1931). 栃木県宇都宮(永井)。

24. *Dictyuchus monosporus* Leitgeb in Jahrb. Wiss. Bot. **7**: 357 (1869). 北海道琴似(永井)；青森県八甲田上毛無，下毛無，睡蓮沼，蔦沼，長沼(いずれも大久保)；群馬県榛名湖，尾瀬ガ原(小林・大久保)；栃木県湯の湖；茨城県中沼；千葉県習志野(大久保)；印旛沼(大久保)；東京都占春池(印東)；神奈川県上震生湖；長野県丸池；木戸池，鵜取池，茅野(大久保)；山梨県山中湖，本栖湖。

25. *Isoachlya itoana* Nagai in Journ. Fac. Agr. Hokkaido Imp. Univ. **32**: 11 (1931). 北海道琴似(永井)。

26. *Isoachlya monilifera* (de Bary) Kauffman in Amer. Journ. Bot. **8**: 231 (1921). 群馬県尾瀬ガ原(小林・大久保)。

27. *Isoachlya subterranea* Dissmann in Beih. Bot. Cent. **58**: 110 (1931). 神奈川県上震生湖。

28. *Isoachlya unispora* Coker et Couch in Coker, Saprolegniaceae: 85 (1923). 神奈川県下震生湖。

29. *Leptolegnia caudata* de Bary in Bot. Zeit. **46**: 631 (1888). 北海道琴似(永井)；青森県睡蓮沼(大久保)；福島県龍沼，田代沼；群馬県尾瀬ガ原(小林・大久保)；栃木県蓼の湖；長野県下の小池，上の小池，一沼，渋池；新潟県苗場山湿原；山梨県山中湖。

30. *Leptolegniella piligena* Ookubo et Y. Kobayasi in Mycol. Journ. Nagao Inst. **5**: 4 (1955). 千葉県二宮(大久保)。

31. *Pythiopsis cymosa* de Bary in Bot. Zeit. **46**: 632 (1888). 北海道野幌(永井)。

32. *Saprolegnia anisospora* de Bary in Bot. Zeit. **46**: 619 (1888). 北海道琴似(永井)。

33. *Saprolegnia asterophora* de Bary in Jahrb. Wiss Bot. **2**: 189 (1859). 群馬県尾瀬ガ原(小林・大久保)。

34. *Saprolegnia diclina* Humphrey in Trans. Amer. Phil. Soc. **17**: 109 (1892). 北海道野幌(永井)；青森県睡蓮沼(大久保)；福島県柳沼，中池，黒泥沼，菱沼，奥の池，川上青沼；群馬県赤城小沼，覚万淵，阿左美大沼，阿左美小沼，広沢沼，桐生川，粕川，鳥川；栃木県湯の湖，刈込湖，切込湖，蓼の湖，思川；茨城県牛久沼；千葉県手賀沼，印旛沼；埼玉県荒川，利根川；東京都石神井池，秋川，多摩川，江戸川，石神井川；神奈川県上震生湖；長野県丸池，長湖，木戸池，蓮沼，渋池，ビワ池，三角池，一沼，鵜取池，大与川，ヒョウタン池，八島ガ池；山梨県山中湖，河口湖；宮崎県大浪池，六観音御池；鹿児島県池田湖。

35. *Saprolegnia ferax* (Gruith) Thuret in Am. Sci. Nat. **14**: 214 (1850). 北海道琴似，札幌，野幌(いずれも永井)；青森県長沼，蔦沼(いずれも大久保)；福島県ホヤ沼；群馬県覚万淵，赤城大沼，尾瀬ガ原(小林・大久保)；栃木県湯の湖，光徳沼；茨城県中沼；千葉県印旛沼，習志野(大久保)；埼玉県荒川；東京都隅田川，石神井川；長野県丸池，松原湖，長湖；京都府京都(伊藤)。

36. *Saprolegnia megasperma* Coker, Saprolegniaceae: 56 (1923). 長野県木戸池，山梨県山中湖。

37. *Saprolegnia mixta* de Bary in Bot. Zeit. **41**: 38 (1883). 京都府京都(伊藤)。

38. *Saprolegnia monilifera* de Bary in Bot. Zeit. **46**: 629 (1888). 北海道琴似，稚内，ビエイ(いずれも永井)。

39. *Saprolegnia monoica* Pringsheim (var. *monoica*) in Jahrb. Wiss. Bot. **1**: 292 (1858). 福島県柳沼，菱沼，西柳沼，ボヤ沼，湯沼，緑沼，川上青沼，事務所沼；群馬県阿左美大沼，阿左美小沼，広沢沼，城沼，鳥川，桐生川，粕川；栃木県五色沼，光徳沼，中禅寺湖，思川；茨城県中沼，牛久沼；千葉県手賀沼，印旛沼；埼玉県クシ沼，五銭沼，利根川，荒川；東京都占春池，石神井池，秋川，石神井川，江戸川；神奈川県上震生湖，下震生湖，片瀬川；長野県丸池；新潟県苗場山湿原。

39a. *Saprolegnia monoica* Pringsh. var. *glomerata* Tiesenhausen in Arch. f. Hydrobiol. u. Planktonk. **7**: 261 (1912). 京都府京都(伊藤)。

39b. *Saprolegnia monoica* Pringsh. var. **acidamica** S. Suzuki, var. nov.

Hyphae basi 60–80μ crassae. Sporangia numerosa apicalia 15–35×100–400μ, sporis 10–12μ crassis in diametro. Gemmae numerosae globulares vel obovoideae vel rare irregulares. Oogonia apicalia rare cum ramibus brevibus, sphaerica (45–) 60–70 (–90)μ in diametro, muribus conspicuis. Oosporae (4–)6–12(–20) in oogonio, 24(–26)μ in diametro, "centric". Antheridia cum oogonibus omnibus clavata androgina ex hyphis primis infra oogonia, caulibus antheridialibus ramiferis.

The variety is distinguished from *Saprolegnia monoica* var. *monoica* by rather slender mycelium, and longer and branched antheridial stalk arising just below the oogonium. The variety shows higher resistivity against inorganic acids than the type.

Hab. Occurring in the water of Lake Akanuma, Fukushima Prefecture, Japan. S. Suzuki, no. 571-Type in Herbarium of Faculty of Pharmacy, Tokyo College of Science, Tokyo).

福島県赤沼，瑠璃沼，青沼，弁天沼，深泥沼，銅沼，青見池，酢沼，ヒョウタン沼，青泥沼，五色川，酢川；群馬県須川；長野県大明神沢；宮崎県不動池。

40. *Saprolegnia parasitica* Coker, Saprolegniaceae : 57 (1923). 青森県長沼(大久保)。

41. *Saprolegnia stagnalis* Tiesenhausen in Arch. f. Hydrobiol. u. Planktonk. **7**: 276 (1912). 群馬県尾瀬ガ原(小林・大久保)。

42. *Saprolegnia terrestris* Cookson in Proc. Royal Soc. Victoria **49**: 235 (1937). 群馬県城沼；栃木県切込湖；千葉県手賀沼；神奈川県下震生湖。

43. *Saprolegnia tokugawana* Emoto in Bot. Mag. Tokyo **37**: 15 (1923). 長崎県佐世保(永井)。

44. *Thraustotheca clavata* (de Bary) Humphrey in Trans. Amer. Phil. Soc. **17**: 131 (1892). 北海道札幌(永井)；群馬県阿左美沼；千葉県印旛沼；東京都占春池；神奈川県下震生湖，長野県木戸池，長湖；山梨県山中湖。

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Summary

44 species (including 4 varieties and 1 form) belonging to 11 genera are listed up with their localities in Japan. **Saplolegnia monoica** var. **acidamica** is a new variety, and **Achlys apiculata** var. **prolifica, Aphanomyces scaba, Aplanes treleanus, Calyptoralegnia achlyoids, Isoachlya subterranea, I. unispora, Saplolegnia megasperma, S. monoica** and **S. terrestris** are new records from Japan.

初島住彦*: 琉球列島産ヤマノイモ属数種について

Sumihiko Hatusima*: On a few *Dioscorea* from the Ryukyus

1. **キールンヤマノイモ** (*Dioscorea pseudojaponica* Hay.)

本種はヤマノイモに近い種類で従来台湾，南支那，西表島(正宗氏による)から知られていたが最近私はこれが北はトカラ列島の中之島，東は北大東島に及んでいる事を知った。従来屋久島，種子島以南にヤマノイモが産する如く報ぜられていたものは本種の誤認と思う。本種は葉が対生で葉腋に珠芽を生ずる点はヤマノイモと同じであるが葉の基部の湾入が浅く側方の耳垂れが開出する点，実が大きい点等で区別出来る。学名としてはヤマノイモの変種と考え *D. japonica* var. *kelungensis* (Kunth) Prain et Burkill (1926) を用いる人もあるがこの変種の基になる *D. kelungensis* Kunth (1924) には *D. kelungensis* Hay. (1921) なる先行名があるので用いることは出来ない。尚参考迄に当教室にある琉球列島産の標本をあげて見ると次の通りである。中之島(内藤喬，迫及川辺 1984)，臥蛇島(迫及川辺 2161)，喜界島(初島及迫 23739)，奄美大島(初島19551，20306，河越重紀)，徳之島(初島 19252)，与論島(大内山茂樹 240，241，上原協)，沖縄島(初島 17350，17442，17585，17962)，北大東島(天野鉄夫 5784)。

Dioscorea pseudojaponica Hay., Icon. Pl. Formos. **10**: 42, f. 21 (1920); Kunth in Engl. Pflanzenreich **87** Heft (IV, 43): 267 (1924); Hatusima & Amano, Fl. Okinawa: 145 (1958).

"*D. rhipogonoides* Oliv.": Hayata, Gen. Ind. Fl. Formos. 84 (1917).

D. kelungensis R. Kunth, l. c. 263 (1924), non *D. kelungensis* Hay. (1921).

D. japonica var. *kelungensis* (Kunth) Prain et Burkill in Kew Bull. **1926**: 119; Yamamoto, Suppl. Icon. Pl. Formos. **3**: 8 (1927), Masamune, Enum. Tracheophyt. Ryukyu Insl. **9**: 116 (1957) syn. nov.

Distrib. Ryukyus, Formosa and S. China.

2. **ツクシタチドコロ** (*Dioscorea asclepiadea* Prain et Burkill) これは九州南部に産するタチドコロの一種でこの type は Rein が 1875 年に肥後の天草と日向で採ったものでいずれも♂本で雌本及果実は知られていなかったのである。近年私はこれが薩摩の下甑島，鹿児島市外の龍ケ水方面，大隅の田野等にも産することを知った。更に面白いことは奄美大島から書かれたアマミタチドコロが本種と同一物なることである。本種はタチドコロに近いが雄花の完全雄蕊は 3 本で 3 本の退化雄蕊が全然見られない点が特

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徴で R. Kunth は1節1種の種類として Sect. Japonicae を建てている。節の記載の所で同氏は雄花序は単総状花序と記しているがこれは出来の悪い個体の場合で生育のよいものではタチドコロ同様複穂状花序になるのが普通である。アマミタチドコロの type は大和村の名音-戸円間で田代善太郎氏が採った♂本でその複基準標本は当教室にもある。私は 1955 年 8 月 25 日同じ大和村の名音の海抜 50 m. 位の岩場で果実の標本を採集した。次に未知の果実及雌花(下甑島産)の記載を付記する。

Spicae ♀ solitariae 3–10 cm longae pauciflorae (3–5), ovarium circ. 5 mm longum 1mm latum glabrum triquetrum, perianthii lobi ovati circ. 1mm longi, staminoidea 3, minuta. Capsula glabra suborbicularis circ. 2 cm longa et lata apice rotundata vel cordata.

Female flowering type: Mt. Odake, Isl. Shimokoshiki, Prov. Satsuma, H. Noguchi 2951. Fruiting type: Ryukyus: Naon, Yamatoson, Isl. Amami-oshima, alt. 80 m., S. Hatusima 19548.

Dioscorea asclepiadea Prain et Burkill in Kew Bull. **1916**: 190; R. Kunth in Engl. Pflanzenreich **87**. Heft. (IV. 43): 254 (1924).

Dioscorea amamiana Koidz., Pl. Nov. Amami-osima: 14 (1928) et in Acta Phytotax. et Geobot. **1**: 172 (1932), syn. nov.

Hab. S. Kyushu and Isl. Amami-Oshima. Distr. Endemic.

3. **ソメモノイモ** これの学名としては山本由松氏(1927)は *D. rhipogonoides* Oliv. を、又正宗氏(1957)は *D. Matsudai* Hay. を用いているが正しい学名は次の通りである。*D. formosana* R. Kunth は Warburg が淡水及基隆で採った葉だけの標本に基いて書かれたものでソメモノイモに似て葉が互生で茎に刺を有する点が異なるとしている。しかしソメモノイモには時々互生葉を出すこともあり又勢のよい枝には往々刺が出ることがあるので恐らくかかる個体をつかまえたものと思う。ソメモノイモの類は変化が著しく葉の基部が多少湾入する比島の *D. luzonensis* Schau. も種としては別種ではないと思う。R. Kunth はソメモノイモの産地としては比島及セーラム島をあげているが Merrill は疑問だとしている。

Dioscorea cirrhosa Lour., Fl. Cochinch. 625: (1790); Prain et Burkill in Asiat. Soc. Bengal **10**: 31 (1914) et in Lecomte, Fl. Gén. Indo-Chine **6**: 738 (1934); R. Kunth, l. c. 288; Merr. in Trans. Amer. Philos. Soc. **24**: 112 (1935).

D. rhipogonoides Oliv. in Hook. Icon. **19**: pl. 1868 (1889), excl. ♀; Yamamoto, l. c. 7.——*D. Bonnetii* A. Chev. in Bull. Econ. Indochine **21**: 328 (1918).——*D. Matsudai* Hay., Icon. Pl. Formos. **10**: 39, f. 20 (1920); Masamune, l.c. 116(1957).——?*D. formosana* R. Kunth, l. c. 268; Yamamoto, l. c. 8.——*D. rhipogonoides* var. *aculeata* Uline msc.

Distr. S. Ryukyus, Formosa, S. China, Phillipines? and Ceram?

尚沖繩本島だけに産する**アケビドコロ**（*D. pentaphylla* L.）はマレーシアに広く分布するが比島から台湾を飛び越えて沖繩島に分布するのは植物地理学上大変興味がある。

〇ミノシライトソウ（原　寛）Hiroshi HARA: A new *Chionographis* from central Honshu

先に黒沢・原は本誌 **35**: 43 (1960) でシライトソウの7倍体が美濃横蔵村に産することを報じたが，その後これは非常にはっきりした地方型であることが分ったのでミノシライトソウと名付けてここに発表する。

現在のところ横蔵村神原の北方（海抜約 300 m）と美山村（旧北山村）神崎夏坂に2個所（海抜 220–300 m）とに知られているだけで，いずれも岩場の湿った土上に生えている。シライトソウに比べて葉が濃緑色で表面は少し光沢があり質厚く主脈が上面ではっきり凹み葉縁の縮れ方が少なく，上側の花被片も長さ 3–6 mm にしかならず，花粉粒は少し大きい。



同地域に4倍体のシライトソウも点々と広く分布していて，ミノシライトソウと混生はしないがすぐ近くの谷に産し，また石灰岩地にも普通形が見られる。この地方のシライトソウはミノシライトソウよりも大形になり，葉は幅広く浅緑色で光沢なく脈はあまり凹まず葉縁の縮れ方が著しく，苞葉は数多く長くなり，上側の花被片は長く 6–13 mm におよび，一見して容易に区別ができ別種の感がある。しかしシライトソウも全国的に見ると変化に富んでいてミノシライトソウと全体や花の大きさ，苞葉，或は葉の形では区別ができないものがある。ミノシライトソウの夏坂のものは花茎の下部が暗紫をおび葉柄に暗紫点があるが，神原のものは一様に緑色である。ミノシライトソウでは花被片は6枚あり，下側の2花被

片は長さ 2 mm 内外で雄蕊より少し長いが，同地のシライトソウでは下側の 2 (3) 花被片は退化して小さく 1 個となったり全く消失することが多い。

終りに神原および夏坂の生育地をそれぞれ案内して下さった橋本竹二郎氏および井波一雄氏に厚くお礼を申し上げ，またこの調査に協力された幾瀬まさ，黒沢幸子両氏に深く感謝する。

Chionographis japonica Maxim. var. **minoensis** Hara, var. nov.

Rhizoma 3–8 mm crassum interdum curvatum. Folia rosulata oblanceolata—oblonga 2–8 cm longa 1–2 cm lata apice acutiuscula vel obtusa basi ad petiolum 5–50 mm longum cuneatim attenuata intense viridia supra luciduscula, nervis lateralibus utrinque 3–5 acute ascendentibus supra distincte impressis subtus elevatis, margine inferiore leviter crispula. Caulis 12–30 cm altus acute angulatus. Folia caulina 4–7 bracteiformia lineari-lanceolata 1–3 cm longa 1–3 mm lata. Spica 1.5–3 cm longa densiflora. Flores sessiles albi. Tepala 6, superiora 3 (4), elongata lineari-spathulata 3–6 mm longa 0.7–0.8 mm lata apice obtusa; inferiora (3) 2, staminibus paullo longiora ca. 2 mm longa. Stamina 6, 1–1.5 mm longa; antherae rotundato-ovatae albidae biloculares filamento breviores. Pistillum 1.5 mm longum; styli 3, 0.5–0.7 mm longi. Numero chromosomo 2n=42.

Nom. Jap. Mino-shiraitosô (nov.)

Hab. Honshu centralis. Prov. Mino: prope Kanbara, Yokokura-mura (Hara & Kurosawa, Jun. 5, 1961—typus in TI); Natsuzaka prope Kanzaki, Miyama-mura (Hara & Kurosawa, Jun. 6, 1961, TI); Kitayama-mura (K. Inami, Mai. 20, 1956, KYO).

This heptaploid plant is characterized in having dark green and slightly lustrous leaves with lateral veins distinctly impressed above, and short upper tepals. Tetraploid *C. japonica* is generally larger in all respects, and has broader thinner leaves which are green, opaque, and crispulate on margin, and longer upper tepals.

□**欧州からでたウェルウィッチアの花粉**　西南アフリカのウェルウィッチア *Welwitchia* は系統学上有名な植物であるが，その花粉が中部ヨーロッパのシレジアの中新世から発見されたのは興味がある。少し旧聞に属するが S. Macko: Lower miocene pollen flora from the valley of Klodnica near Gliwice (Upper Silesia) [Travaux d. la Soc. d. Sci. et d. Lett. d. Wroctaw] ser. B, Nr. 88: 78 及び pl. 69. f. 14–17 (1957) にでている。　(前　川　文　夫)

北川政夫*：東亜植物断想録 (14)

Masao Kitagawa*: Notulae fractae ob floram Asiae Orientalis (14)

120) トサボウフウ一言　トサボウフウ (*Angelica Yoshinagae* Makino) は 1926 年に牧野富太郎博士によって命名された四国産の植物である。原寛氏は本種をイヌトウキ (*Angelica shikokiana* Makino) の変種と見なし，その後村田源及び山中二男両氏はイシヅチボウフウ (*Angelica saxicola* Makino) の変種にすべきであるとの新意見を発表された。私は拙著 "Synoptical Review of Umbelliferae from Japan, Korea & Manchuria" (1960) 中でこの種を従来通り独立種として取扱って置いた。今この紙面をかりて，その理由とする所を記して見たい。トサボウフウはイヌトウキとは大分形態的に異ったもので同一種内に入れることは出来ない。次に，イシヅチボウフウとの関係であるが，よく両者を比較すると次の如き明確な相違点が見出される。

イシヅチボウフウ――葉の裂片は比較的小さく，上面に光沢があり，両面は脈のみに細毛を生じ，縁辺は無毛平滑で，やや太い隆起した脈で縁取られる。萼片は明瞭で三角形。

トサボウフウ――葉の裂片は比較的大きく，上面は無光沢，両面共に脈上及び脈外の部分にも細毛を生じ，縁辺にも及んで縁毛となる。萼片は退化して見られない。

以上の如き形態の差によってトサボウフウを独立種と考えてよいと思う。

121) ホタルサイコ類について　朝鮮，満州，東部シベリア方面に拡がるオオホタルサイコと日本に多いホタルサイコは以前別種として取扱われていたが，最近になってこの両者を同一種に含める傾向が見られるようになった。外見はたしかによく似た種類であるが，よく観察すると花序の諸部分に可なり明確な相違が認められる。Linczevski 氏は "Flora URSS" 第16巻279頁の検索表に於て *Bupleurum longeradiatum* Turczaninow 即ちオオホタルサイコと *Bupleurum sachalinense* Fr. Schmidt 即ち元ホタルサイコに当てていたものを別種となし，非常に手際よく差異点を示している。即ち訳すると次の如くである。

小繖梗は常に長く，花期では長さ (2) 4–5 mm，成果期では 10–15 mm に伸長する (var. *breviradiatum* Fr. Schmidt を除く)。小繖梗の苞片は披針形乃至楕円状披針形で長さ 1–2.5(3) mm，巾 1mm ある。……………………*Bupleurum longeradiatum* Turcz.

小繖梗はより短く，成果期に於ても伸長しない。小繖梗の苞片はより長く広く，長さ 4 mm に及び巾 2–2.5 mm あり，卵形乃至楕円形，稀に広披針形をなす。………
………*Bupleurum sachalinense* Fr. Schm.

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同氏がこの表で断ってあるように var. *breviradiatum* Fr. Schmidt は小織梗が短く果時にも伸びない性質をもっているが，その他の形質は基本種と異る所がないとしている。従ってこの変種名をホタルサイコに用いることは不適当である。次に問題になるのは *Bupleurum sachalinense* Fr. Schmidt そのものであって，これは樺太，ウスリー，北海道等に分布し，広江氏，原寛氏等よってエゾホタルサイコとされ，ホタルサイコとは一応分けられている。本種はホタルサイコに比して丈高く全体剛直で，繖梗の数が多く 20 以上に及ぶものもあり，小総苞片も比較的大きく，本州産のものとは大分異なるのでオオホタルサイコの亜種と見なし，ホタルサイコをその変種として整理する。

Bupleurum longeradiatum Turczaninow in Bull. Soc. Nat. Mosc. **17**-4: 719 (1844); Kitagawa, Lineam. Fl. Mansh. 336 (1939): Syn. Rev. Umbell. Jap., Kor. & Manch. 10 (1960); Linczevski in Fl. URSS **16**: 287, t. 21 f. 4 (1950); Nakai, Syn. Sk. Kor. Fl. 86 (1952); Ohwi, Fl. Jap. 840 (1953); Hara, Enum. Sperm. Jap. **3**: 301 (1954); Hiroe & Constance, Umbell. Jap. 55 (1958), pro parte.

subsp. **longeradiatum.**

Nom. Jap. Oh-hotarusaiko.

Area Geogr. Dahuria, Amur, Ussuri, Manshuria, Mongolia, Korea & Japonia (Hokkaidô).

f. **breviradiatum** (Fr. Schmidt) Kitagawa, stat. nov.

B. longeradiatum Turczaninow var. *breviradiatum* Fr. Schmidt ex Maximowicz, Prim. Fl. Amur. 125 (1859); Linczevski, l.c. 288 (in descr.) (1950).

B. sachalinense (non Fr. Schm.) Sugawara, Ill. Fl. Sagh. **3**: 1381, t. 636 (1940).

Nom. Jap. Me-hotaru-saiko (nov).

Area Geogr. Amur & Sachalin.

f. **Leveillei** (Boissieu) Kitagawa, stat. nov.

B. Leveillei Boissieu in Bull. Soc. Bot. France **58**: 413 (1910); Nakai, l.c. 86 (1952).

B. longeradiatum Turczaninow var. *breviradiatum* Fr. Schmidt f. *Leveillei* (Boissieu) Koso-Poljansky in Bull. Soc. Nat. Mosc. n. s. **29**: 241 (1916).

B. longeradiatum Turczaninow var. *Leveillei* (Boissieu) Kitagawa, Syn. Rev. Jap., Kor. & Manch. 11 (1960).

Nom. Jap. Saisyû-saiko.

Areo Geogr. Korea (Ins. Quelpaert).

subsp. **sachalinense** (Fr. Schmidt) Kitagawa, stat. nov.

B. sachalinense Fr. Schmidt, Reise Sach. 135 (1868); Linczevski, l. c. 289 (1950).

B. longeradiatum Turczaninow f. *sachalinense* (Fr. Schmidt) Nakai in Bot. Mag. Tokyo **23**: (45) (1909); Hara, l. c. 302 (1954).

B. longeradiatum Turczaninow var. *sachalinense* (Fr. Schmidt) Boissieu in Bull. Soc. Bot. France **57**: 413 (in nota) (1910).

Nom. Jap. Ezo-hotarusaiko.

Area Geogr. Kuriles, Sachalin, Ussuri & Japonia (Hokkaidô).

var. **elatius** (Koso-Poljansky) Kitagawa, stat. nov.

B. longeradiatum Turczaninow var. *breviradiatum* Fr. Schmidt f. *elatius* Koso-Poljansky in Bull. Soc. Nat. Mosc. n. s. **29**: 60 (1916).

B. longeradiatum Turczaninow f. *elatius* (Koso-Poljansky) Hara, l. c. 301 (1954).

B. longeradiatum Turcz. var. *breviradiatum* (non Fr. Schmidt) auct. Fl. Jap.

B. sachalinense (non Fr. Schmidt) auct. Fl. Jap.

Nom. Jap. Hotaru-saiko, Hotarusô.

Area Geogr. Japonia.

var. **shikotanense** (Hiroe) Ohwi, Fl. Jap. 840 (1953), comb. nud. ut *B. longeradiatum* var. *shikotanense*; Ohwi in Bull. Sci. Mus. Tokyo **33**: 80 (1953); Hara, l. c. 302 (1954); Kitagawa. Syn. Rev. Umbell. Jap., Kor. & Manch. 11 (1960).

B. shikotanense Hiroe in Act. Phytot. Geobot. **14**: 145 (1952).

Nom. Jap. Kogane-saiko.

Area Geogr. Kuriles & Japonia (Hokkaidô).

122) タカサゴソウ類について 北支那，満州，朝鮮，東部シベリア等の荒蕪地の到る所に見られるマンシュウタカサゴソウはこれ迄 *Ixeris chinensis* Nakai subsp. *versicolor* Kitamura の学名で呼ばれて来たものである。最近この亜種名の基本名になっている *Lagoseris versicolor* Fischer ex Link の原記相文を読んで見た所が，その記相文はマンシュウタカサゴソウには全然当てはまらず，Gmelin 氏や Popov 氏の著書の挿画を参照するに及んで，これは寧ろコウアンタカサゴソウ即ち私が subsp. *chrysantha* (Freyn) Kitagawa として扱ったものと同一種であることが判った。故にマンシュウタカサゴソウの学名には *Lactuca hallaisanensis* Léveillé を採用し，これを亜種名に下し subsp. *hallaisanensis* (Léveillé) Kitagawa と改める。従ってコウアンタカサゴソウの学名としては原種名を尊重して subsp. *versicolor*(Fischer) Kitamura を用いなければならぬ。日本産のタカサゴソウは北村四郎博士の説の如くコウアンタカサゴソウに酷似したものである。ただしコウアンタカサゴソウは学名で唱ってあるように花が淡紫色，紫色，濃黄色等著しく変化し，同一地域でもそれらが混生しているが，タカサゴソウは常に紫色を帯びた白色の花を開くのみで決して変色しない固定性をもつので，その点を重視して品種として分けることにする。マンシュウタカサゴソウは白色又は黄色で紫色にはならない。又台湾に産するキレバタカサゴソウは葉の特殊な分裂法，頭花の大きさ，

果実の嘴部の長さ等の諸点に於てウサギソウとは相当異っているので早田文蔵博士の説通り別種として考えて見る。又タイトウタカサゴソウもウサギソウと可なり違うのでその変種とする。

Ixeris chinensis (Thunberg) Nakai in Bot. Mag. Tokyo **34**: 152 (1920); Kitamura in Bot. Mag. Tokyo **49**: 282 (1935); in Act. Phytot. Geobot. **10**: 23 (1941); in Mem. Coll. Sci. Univ. Kyoto B, **23**: 112 (1956).

Prenanthes chinensis Thunberg, Fl. Jap. 301 (1784), pro parte.

Youngia ? chinensis (Thunberg) De Candolle, Prodr. **7**: 194 (1838).

Lactuca versicolor (non Schultz Bip.) Maximowicz in Bull. Acad. Imp. Sci. St.-Pétersb. **19**: 531 (1874): in Mél. Biol. **9**: 362 (1874), pro parte.

Lactuca chinensis (Thunberg) Makino in Bot. Mag. Tokyo **17**: 89 (1903), quoad basonym tantum.

Lactuca flavissima Hayata, Icon. Pl. Form. **8**: 78 f. 31-3 (1919).

Lactuca lacerrima Hayata f. *flavissima* (Hayata) Kitamura in Act. Phytot. Geobot. **1**: 152 (1932).

subsp. **chinensis.**

Nom. Jap. Usagi-sô.

Area Geogr. China med. & austr., Indo-China, Formosa, Liukiu & Bonin.

var. **taitoensis** (Hayata) Kitagawa, stat. nov.

Lactuca taitoensis Hayata, Icon. Pl. Form. **8**: 76 f. 31-2 (1919).

Ixeris chinensis Nakai f. *taitoensis* (Hayata) Yamamoto in Journ. Trop. Agr. **8**: 352 (1935); Kitamura in Mem. Coll. Sci. Univ. Kyoto B: **23**: 113 (1956).

Nom. Jap. Taitô-takasago-sô.

Area Geogr. Formosa & China.

subsp. **versicolor** (Fischer) Kitamura in Bot. Mag. Tokyo **49**: 283 (1935), quoad basonym tantum, excl. specim. tot.

Hieracium foliis radicalibus quibusdam ex sinuato dentatis, quibusdam ut et caulinis linearibus integerrimis Gmelin, Fl. Sib. **2**: 20, n. 18 t. 7 f. 1 (excl. I & II) (1749).

Lagoseris versicolor Fischer ex Link, Enum. Pl. Hort. Berol. **2**: 289 (1822).

Barkhausia versicolor (Fischer) Sprengel, Syst. Veg. **3**: 651 (1826).

Prenanthes versicolor Fischer ex Bunge in Mém. Sav. Étrang. Acad. Sci St.-Petersb. **2**: 114 (1833).

Ixeris versicolor De Candolle, Prodr. **7**: 151 (1838); Ledebour, Fl. Ross. **2**: 817 (1846), pro parte.

Crepis versicolor Fischer in litt. ex De Candolle, l. c. (1838), pro syn.; M. Popov, Fl. Centr. Sib. **2**: 778 t. 90 f. 1 (1959).

Lactuca versicolor Schultz Bip. ex Herder, Pl. Radd. **3**: 4: 29 (1870).

Ixeris scaposa Freyn in Oesterr. Bot. Zeitschr. **40**: 44 (1890): **45**: 434 (1895) cum var. *chrysantha* Freyn, var. *straminea* Freyn, var. *versicolor* Freyn & var. *purpurascens* Freyn.

Ixeris chinensis Nakai var. *purpurascens* (Freyn) Kitagawa in Bot. Mag. Tokyo **48**: 114 (1934).

Ixeris chinensis Nakai subsp. *chrysantha* (Freyn) Kitagawa, Lineam. Fl. Mansh. 453 (1939).

Ixeris chinensis Nakai subsp. *versicolor* Kitamura var. *collina* Kitagawa, l. c. 454 (1939), syn. nov.

Ixeris chinensis Nakai subsp. *strigosa* (Léveillé & Vaniot) Kitamura in Mem. Coll. Sci. Univ. Kyoto B: **23**: 114 (1956), pro parte.

Nom. Jap. Kôan-takasago-sô, Murasaki-takasago-sô, Yama-takasago-sô.

Area Geogr. Dahuria, Amur & Manshuria.

f. **strigosa** (Léveillé & Vaniot) Kitagawa, stat. nov.

Lactuca strigosa Lévellé & Vaniot in Bull. Acad. Geogr. Bot. **20,** Mém.: 114 (1909).

Ixeris chinensis Nakai subsp. *strigosa* (Léveillé & Vaniot) Kitamura in Bot. Mag. Tokyo **49**: 283 (1935): in Mem. Coll. Sci. Univ. Kyoto B, **23**: 114 (1956), pro parte.; Hara, Enum. Sperm. Jap. **2**: 213 (1952).

Ixeris chinensis Nakai var. *strigosa* (Léveillé & Vaniot) Ohwi, Fl. Jap. 1246 (1953), comb. nud.: in Bull. Nat. Sci. Mus. Tokyo **33**: 90 (1953).

Nom. Jap. Takasago-sô.

Area Geogr. Japonia & Korea.

subsp. **hallaisanensis** (Léveillé) Kitagawa, stat. nov.

Lactuca versicolor (non Schultz Bip.) Maximowicz, l. c. (1874), pro parte; Forbes & Hemsley in Journ. Linn. Soc. **23**: 485 (1888).

Lactuca hallaisanensis Léveillé in Fedde, Repert. **12**: 100 (1913).

Ixeris chinensis (non Nakai) Kitagawa in Bot. Mag. Tokyo **48**: 113 (1934).

Ixeris chinensis Nakai subsp. *versicolor* Kitamura in Bot. Mag. Tokyo **49**: 283 (1935); in Act. Phytot. Geobot. **9**: 114 (1940): in Journ. Jap. Bot. **21**: 52 (1947); in Mem. Coll. Sci. Univ. Kyoto B, **23**: 115 (1956), excl. basonym, quoad specim. pro parte.; Kitagawa, Lineam. Fl. Mansh. 453 (1939), quoad specim.

Ixeris versicolor (non De Candolle) Nakai, Syn. Sk. Kor. Fl. 121 (1952).

Nom. Jap. Manshyû-takasago-sô.

Area Geogr. China bor., Manshuria, Sibiria orient. & Korea.

subsp. **graminifolia** (Ledebour) Kitagawa, Lineam. Fl. Mansh. 453 (1939).

Crepis graminifolia Ledebour in Mém. Acad. Sci. St.-Petersb. **5**: 558 (1814).

Ixeris graminifolia (Ledebour) Kitagawa in Rep. First Sci. Exped. Manch. **4**: **4**: 95 (1936).

Ixeris versicolor (non De Candolle) Ledebour, Fl. Ross. **2**: 817 (1846), pro parte.

Ixeris chinensis Nakai subsp. *versicolor* Kitamura in Act. Phytot. Geobot. **9**: 114 (1940), pro parte.

Nom. Jap. Itoba-nigana.

Area Geogr. Manshuria, Mongolia & Sibiria.

var. **intermedia** Kitagawa in Rep. Inst. Sci. Res. Manch. **4**: 87 (1940), ut *I. chinensis* subsp. *versicolor* Kitamura var. *intermedia* Kitagawa.

Ixeris chinensis Nakai subsp. *versicolor* Kitamura in Mém. Coll. Sci. Univ. Kyoto B, **23**: 115 (1956), pro parte.

Nom. Jap. Hosoba-takasago-sô.

Area Geogr. Manshuria.

Ixeris lacerrima (Hayata) Kitagawa, comb. nov.

Lactuca lacerrima Hayata, Icon. Pl. Form. **8**: 76, f. 31-1 (1919).

Lactuca lacerrima Hayata, var. *saxatilis* Kitamura in Act. Phytot. Geobot. **1**: 152 (1932), syn. nov.

Ixeris chinensis Nakai var. *saxatilis* (Kitamura) Kitamura in Bot. Mag. Tokyo **49**: 283 (1935): in Mem. Coll. Sci. Univ. Kyoto B: **23**: 113 (1956).

Ixeris chinensis Nakai f. *lacerrima* (Hayata) Yamamoto in Journ. Trop. Agr. **8**: 352 (1936).

Nom. Jap. Kireba-takasago-sô.

Area Geogr. Formosa.

123) **満洲新発見植物 (1) Plants new to Manchurian flora** (1) 満州で新たに発見されていながら未だに発表されていない植物が可なりあるので，下等のものから順次紹介することにした。

長 白 山 産 (Mt. Chanpaishan)

Botrychium lanceolatum (Gmelin) Angstr. in Bot. Notis. **1854**: 68 (1854).

Botrychium palmatum Presl, Suppl. Tent. Pter. 43 (1845).

Nom. Jap. Miyama-hanawarabi.

Athyrium pterorachis Christ in Bull. Herb. Boiss. **4**: 668 (1896).

Dryoathyrium pterorachis(Christ)Ching in Bull. Fan Mem. Inst. Biol. **11**: 81(1941).

Cornopteris pterorachis (Christ) Tard.-Blot in Amer. Fern Journ. **48**: 32 (1958).

Parathyrium pterorachis (Christ) Holttum in Kew Bull. 1958: **3**: 449 (1959).

Nom. Jap. Oh-mesida.

Area Geogr. Kamtschatka, Kuriles austr., Sachalin, Korea & Manshuria.

Lycopodium alpinum Linnaeus var. **planiramurosum** Takeda in Bot. Mag. Tokyo **23**: 229 (1909).

Nom. Jap. Miyama-hikagenokazura.

Area Geogr. Kuriles, Japonica bor. & Manshuria.

Lycopodium Selago Linnaeus, Sp. Pl. **2**: 1102 (1753).

Nom. Jap. Tisima-sugiran.

Area Geogr. Hemisph. bor.

Selaginella borealis Ruprecht in Beitr. Pflzk. Russ. R. **3**: 32 (1845).

Nom. Jap. Kita-kuramagoke (nov.).

Area Geogr. Sibiria orient. & Manshuria.

Errata to Notulae ob floram Asiae Orientalis (12)
in Journ. Jap. Bot. **34** (1959)

p. 363 line 17 for *versicolor* Bunge read *nipponicum* Matsumura

p. 366 under line 12 add *Cynanchum yesoense* Nakai in Bot. Mag. Tokyo **28**: 332 (1914).

○ヤツデアケビ (檜山庫三) Kōzō HIYAMA: *Akebia quinata* Decne. forma *polyphylla* Hiyama

1960年5月15日，武州入間郡梅園村黒山で，5〜7個の小葉をもったアケビを採集した。ちょうど花が終った後で伸びはじめた10個の子房をとどめていた（アケビの子房数は3〜12個である）。これは朝鮮のもので記載されたヤツデアケビであって，日本では初見ではないかと思うので記録する。

Akebia quinata (Thunb.) Decne. forma **polyphylla** (Nakai) Hiyama stat. nov.

A. quinata var. *polyphylla* Nakai, Fl. Sylv. Korea. **21**: 44 (1936)—Nom. Jap. Yatsude-akebi.

Hab. Hondo: Umezono-mura, Iruma-gun, Prov. Musashi (K. Hiyama, May 15, 1960).

Benjamin C. STONE*: **A note on chromosome number in *Pandanus***

ベンジャミン，シー，ストーン*：タコノキ属の染色体数について

Cytological studies of the Pandanaceae are extremely few. The recent compilation of chromosome numbers in flowering plants by Darlington and Wylie (1955) gives only three data for *Pandanus*, obtained from two studies, and none for the other genera of the family, *Sararanga* and *Freycinetia*. *Sararanga* is a relatively rare genus of only two species, one restricted to New Guinea and the Solomon Islands, the other to Philippine Islands (Stone, 1961), hence the lack of information is not surprising. However, both *Pandanus* and *Freycinetia* are large genera of numerous species and occur over a wide range in the Old World tropics. Recently Skottsberg (1953) reported on chromosome counts made on a number of Hawaiian species, including *Pandanus*; his figures correspond well with those obtained earlier by Tjio (1948) and Harada (1947) which were reported in Darlington & Wylie.

Tjio investigated two species, obtaining the somatic number from root-tip preparations. The root tips were fixed in Lewitsky's, Karpechenko's, and osmic-acid fluids, stained in Feulgen stain, bleached in a solution of one volume 30% hydrogen peroxide plus ten volumes 85% ethanol, and restained in Clausen's gentian violet. The somatic number for both species was $2n=60$. The species were *Pandanus pacificus* Veitch and *P. pygmaeus* Thouars. Harada, working with material of *Pandanus boninensis* Warburg, used a slightly different technique, fixing the root-tips in Navashin's fluid and staining with Newton's gentian violet. The chromosomes were observed to be short rods or dots with but slight variation in size, ranging from 0.7 to 2.0 microns. The somatic number obtained was $2n=64$. Skottsberg's report of *Pandanus tectorius* var. *sandvicensis* Warburg included three counts of root-tip preparations indicates some variability, the counts obtained were $2n=51$, $2n=54$, and from another collection, $2n=60$. The suggestion was made that $x=15$.

In 1956 the writer attempted to ascertain the meiotic number of the Hawaiian *Pandanus*. Male buds of a tree growing on the University of Hawaii campus were fixed in Newcomer's fluid, and preparations made according to the squash method described by Darlington and La Cour (1950) with aceto-carmine used for staining.

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A considerable amount of gelatinous material interfered with the observations, taking up much of the stain, and very few dividing cells were found. Still it was possible on the basis of a few counts to establish the haploid number as n=30. There is however some doubt, as some cells appeared to contain 31 chromosomes. (See Figure 1).

Later, root-tips from seedlings obtained from a natural grove of *Pandanus* growing along the Castle Trail at Punalu'u, Koolau Mountains, Oahu, were prepared following Harada's method. The counts obtained were somewhat inconclusive, but appeared to show 2n=60, 2n=62, and 2n=64?.

These counts in general substantiate those of Skottsberg, and also those of Tjio and Harada. The variability encountered, however, which appears to be something other than simply error in observation, is of interest. In view of the enormous number of species of *Pandanus*, and the remarkable divergence of the subgenera and sections of the genus, the meagre information available seems scarcely sufficient to base any hypotheses as to the basic number in the genus. It would appear that x=15 or a number of approximately 10 to 16, but it must be remembered that there are perhaps five or six hundred species left to investigate.

There is also a serious drawback to the utilization of some of the available information; that is, the present chaos and confusion in the taxonomy of the genus *Pandanus*, or perhaps more pertinently, to those plants known in cultivation. The two species cited by Tjio are a prime example. *Pandanus pacificus* Veitch is a name which is really but a disguise for our ignorance of the true affinities of cultivated plants, apparently of Sect. *Pandanus*, which seldom (if ever) bear flowers or fruit, and which exist mainly in cultivation, and perhaps mainly in greenhouses. Throughout the Pacific Islands the various species of *Pandanus* furnish useful products for the indigenous peoples. The leaves are commonly used in weaving and plaiting mats and for thatch. In many villages in Polynesia, and Melanesia, *Pandanus* is a crop plant; often trees are regularly shorn of their older leaves for drying and later use. In most cases, certain cultivars are esteemed for producing the better quality leaves, and very often these are sterile plants. They may or may not be related to the adjacent wild species, or to one of the other cultivars also in use. Since the taxonomy of these plants, like most plants, is based on reproductive organs—and in *Pandanus* on the fruits in particular -it is a completely arbitrary matter, within certain limits, to affix names to these cultivars. From the leaves it is usually possible to associate the plant with the appropriate section of

the genus, and sometimes to a certain group of species, but exact specific identifications are as yet impossible. Consequently the term *P. pacificus* Veitch is a highly ambiguous identification; in fact, it implies that the plant is known, whereas it is not. It has been suggested that this cultivar is the same species as *P. bidur* Junghuhn, but this is merely speculation. The same situation may apply to the plant known as *P. pygmaeus*. There is, in fact, a wild species which is properly known under this name. However, it is also a name applied to any number of similar "dwarf" species by horticultural houses, mostly of the section *Microstigma*. Again, however, there is considerable doubt as to the application intended when the name is used; and if applied to sterile material from greenhouse, is at best a suggestion of identity, not an identification.

With *Pandanus boninensis* the case is different. This species is endemic to the Bonin Islands, and is relatively well understood from a taxonomic standpoint. Harada states, also, that his material was obtained from wild specimens.

The wild indigenous *Pandanous* of the Hawaiian Islands clearly represents a single rather variable species. It has been called *P. odoratissimus* L. f., which is however a distinct species first collected in Ceylon, and ranging in the Asiatic tropics as far east, perhaps, as the Philippines. It has also been called *P. tectorius*, usually attributed to Solander, although strictly speaking the author is Parkinson. This name was applied to a species from Tahiti, but without adequate specimens, the true application of the name is a matter of such grave doubt, and the description so short and non-committal, that is a real question whether the species could be determined even if rediscovered. It would not be unlikely, however, that a Tahitian and a Hawaiian species should be actually identical, or perhaps only varietally distinct. Still it seems best for the time being to apply to the Hawaiian plants some restrictive name which could be dropped if and when the relationships of the species are elucidated. Luckily, such a name is available; in fact several are available, since three names were coined by Gaudichaud (1836), all based on Hawaiian specimens. Arbitrarily we may select one of these, *Pandanus Douglasii* Gaud., for the Hawaiian species. Further studies may show that subspecific names for various minor taxa may be required, but for the present purpose the binomial will suffice. Martelli (1930) has described varieties, which he placed in *P. odoratissimus*, but these will be temporarily ignored.

These preliminary notes are not presented so much with the idea of bringing the small amount of new information available into general into general currency,

but hopefully to stimulate further work. In anticipation of such work a number of species of *Pandanus* have been introduced into cultivation at the Foster Botanical Gardens in Honolulu. Many of these were grown from seed obtained from wild plants collected by the writer in Melanesia in 1957, under the auspices of a National Science Foundation grant to Dr. Harold St. John, who is engaged in broad taxonomic studies of the genus at present. These in many cases are undescribed

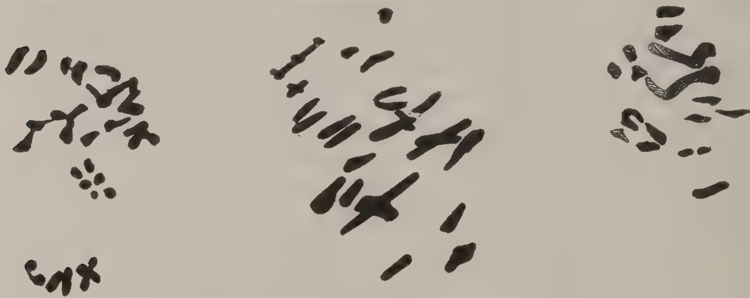


Fig. 1. Meiotic figures from male microsporocytes of *Pandanus Douglasii* Gaud., trees growing on the University of Hawaii Campus (front of Hawaii Hall west of the Circle, north of the Hall). Specimen preserved (Stone) at Bishop Museum, Honolulu.

species, and cannot be detailed here, but others are well-known. Collections from Micronesia also are represented, including several cultivars with edible fruits. Among others there are *Pandanus patina* Martelli, an endemic species from Ponape, Caroline Islands; an edible cultivar, "Tipinu taring" from Kapingamarangi Atoll; *Pandanus Rechingeri* Martelli, from the Solomon Islands, and *P. Cominsii* Hemsley. It is hoped that all of these species eventually may be investigated to obtain chromome numbers. Since in some cases numerous individuals are present, it is further hoped that some will be male plants. These are greatly desirable, not only from the purely taxonomic standpoint, but from that of cytology. Investigations of meiosis in pollen mother cells is both easier to accomplish and more reliable than are root-tip counts, and in addition allow for more subtle observations besides the simple counting of chromosomes.

Male buds, however, are very difficult to obtain, at least in most species, and generally pollen maturation is complete long before the inflorescence is visible. The structure of the tree, with its rather thick branches bearing at their ends a dense cluster of long, stiff, sharp-toothed leaves, is not easily amenable to the search

for cytological material. The only way to obtain an inflorescence sufficiently immature is to make a mass investigation of branches by removing all leaves. Naturally, it is of great help to know in advance whether the tree is male or female, but sometimes this is not possible. The inflorescence is hidden by the dense ranks of leaves until, with a remarkable rapidity of growth, it elongates, expands, sheds its vast amount of pollen, and quickly withers or decays. There is no method of predicting which branches will bear inflorescences, and should the collector find an immature inflorescence, there is still the possibility that it is already long past the stage of pollen formation. Such a prospect is discouraging, and in fact, results from this random method of collecting have indicated about 3% success. Once the sex of a tree is ascertained, however, and some data on the flowering season, more confidence in attaining suitable material is assured. In Hawaii, the trees bloom somewhat sporadically, but there is a period when numerous males exhibit mature flowers; however, flowers are seen at almost any time of year. The period of growth is not known, but probably at least a month before the inflorescence is visible, the pollen is mature.

The difficulty of obtaining dividing pollen mother cells has led to the idea of pollen culture. This has not as yet been attempted, but would seem a promising technique, which, if successful, would be preferable to the random method of searching outlined above. The writer would be interested in contacting any worker to whom this possibility appeals, as his removal to Washington precludes immediate continuation of this research.

In the meantime it is hoped that similar investigations may be pursued by those in a position easily to obtain material. Extensive work on greenhouse plants whose identity is uncertain, however, is not to be encouraged. It should be superfluous to urge that voucher specimens be retained in all cases. In addition it should be remarked that *Pandanus* provides an interesting subject for two other lines of investigation, embryology and cytogenetics. As early as 1909, D. H. Campbell discussed the supernumerary nuclei in embryo sacs of various species of *Pandanus*; the cells contain 12-14 or up to 64 nuclei before fertilization, a number which is said to exceed that known for any other angiospermous plant. Another subject greatly deserving of study is the presence of parthenocarpy which has been reported, long ago by Kurz (1867) and more recently by Fagerlind (1940). The presence and distribution of this phenomenon in the genus would be a critical factor in taxonomic considerations.

Current studies of taxonomy are in progress (St. John, 1960, and in press).

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□北村四郎・村田 源: **原色日本植物図鑑草本篇(中)離弁花類** 保育社 21 cm 版, 390 pp. 原色図版 72, 挿図 159 (15 VI 1961) ¥ 1,600 原色図鑑の第16巻として, さきに出版された草本合弁花類や後から出る単子葉類篇とともに企画された姉妹篇であって, 形式はいずれも大体同様であって, 説明を補うため 159 の解剖図が必要なところに挿入してある。内容は離弁花類を原色図や, 説明や, 挿図などで網羅し, 科の特徴や属の検索表がつけてあり, 巻末に学名と和名の索引がある。またトリカブト属については特にこの属を検討中の田村道夫氏作製の未公表検索表をとりいれてある。ジャケットにはオキナグサ, 表紙にはオオビランジ, 箱にはキョウガノコとトキワイカリソウの原色図を中心にして意匠をこらしてある。(久 内 清 孝)

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Shoichi KAWANO*: **Brief notes on the chromosomes of some Japanese plants (1)**

河野昭一*: 日本植物の染色体短報 (1)

Five species of Compositae were karyologically analyzed. All preparations were made by using the 8-oxyquinoline pretreatment method described by Tjio and Levan (1950). Somatic chromosomes were counted in the root tip cells of seedlings germinated in pots.

1. *Ixeris dentata* Nakai (Fig. 1)

Seeds were collected from the plant growing in the rather dry marsh near the seashore at Noshappu-misaki, Wakkanai. Radical leaves of this sample plant are obovate-lanceolate, finely dentate at the margin, and acute at the top. Cauline leaves are small and not so amplexicaul.

Twenty-one somatic chromosomes were counted in root tip cells. The chromosomes can be classified into six main groups which have been described by Nishioka 1956). Among the largest chromosomes, only one possesses a secondary constriction in one arm but two others have none. Takemoto (1954) has reported a similar case in *Ixeris dentata* f. *dentata* and in f. *amplifolia*. Whilst Nishioka (1956) has observed a case where each of largest chromosomes have secondary constrictions. In the present study it was further noted that of the three chromosomes belonging to the $3E^{st}$ type (in Nishioka's sense) only one chromosome possesses a long arm much longer than in the others.

The karyotype formula of the present sample plant can thus be expressed as follows:

$$K(2n)=21=1^{cs}A^{m}+2A^{m}+3B^{sm}+3C_{1}^{sm}+6C_{2}^{sm}+3D^{m}+1E^{st}+2F^{st}$$

2. *Picris hieracioides* L. ssp. *japonica* Krylov (Fig. 2 & 5)

This plant with 2n=10 chromosomes is of the very robust and tall type which is rather common in northern Japan. The karyotype of this sample plant was determined as follows:

$$K(2n)=10=2A^{sm}+2B^{st}+2C^{sm}+2D^{st}+2E^{sm}$$

The karyotype formula is a little different from the previous result of Nishioka (1956), i. e., the third and fifth pairs of chromosomes have constrictions at the submedian part rather than at the subterminal, and further, satellite chro-

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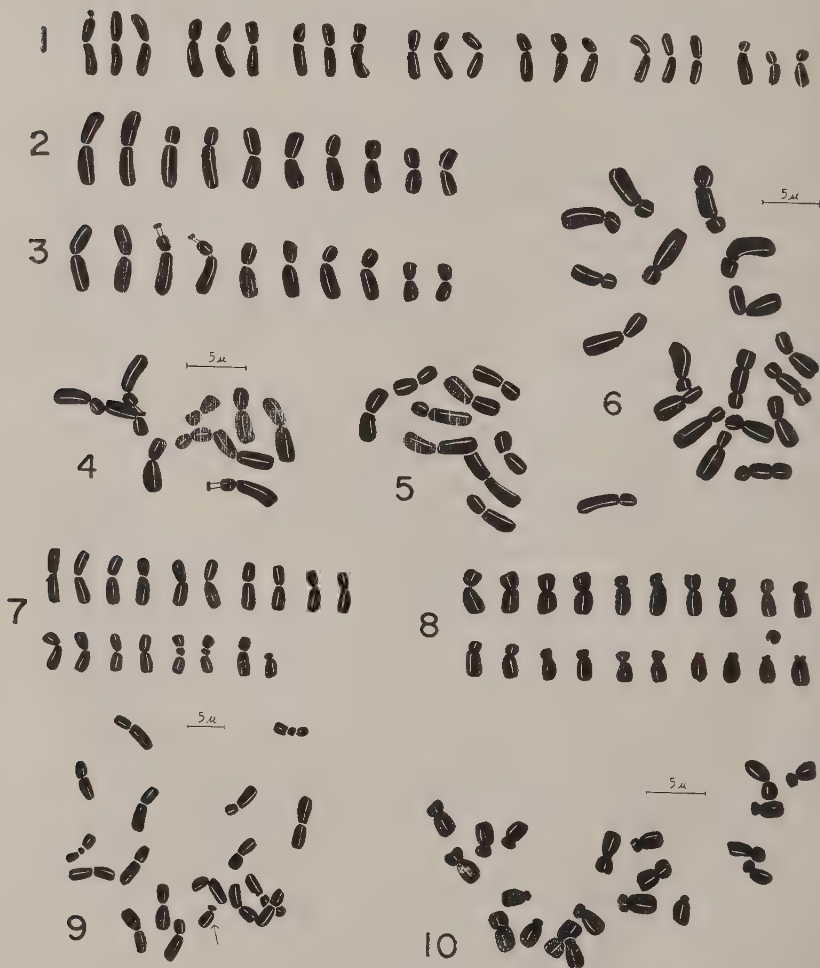


Fig. 1-10. Somatic Chromosomes. 1. *Ixeris dentata.* 2 & 5. *Picris hieracioides* ssp. *japonica.* 3 & 4. *Picris hieracioides* ssp. *kamtschatica.* 6. *Lactuca Raddeana* var. *elata.* 7 & 9. *Aster scaber.* 8 & 10. *Eupatorium Glehni.*

mosomes are lacking in the present sample plant (cf. Nishioka, 1956)

3. *Picris hieracioides* L. ssp. *kamtschatica* (Ledeb.) Hult. (Fig. 3 & 4)

The origin of the sample plant is not exactly known, but it seems nevertheless apparent that this was collected from the alpine zone of Hokkaido. It has ten chromosomes.

The karyotype formula is as follows:

$K(2n)=10=2A^{sm}+2^{t}B^{st}+2C^{sm}+2D^{st}+2E^{sm}$

4. *Lactuca Raddena* Maxim. var. *elata* (Hemsl.) Kitam. (Fig. 6)

Eighteen somatic chromosomes were counted in this plant. The karyotype could not be determined certainly in this material. However, among the 18 chromosomes two pairs show clearly a constriction (cf. Nishioka, 1956).

5. *Aster scaber* Thunb. (Fig. 7 & 9)

Morphologically this is fairly a stable species with 2n=18 chromosomes, and the plant from which some seeds were collected is also a typical form. The result of the cytological analysis is essentially in accordance with Huziwara's previous

Table 1. Chromosomes numbers of some *Compositae* plants.

Species name	Present result (2n)	Locality	Previous report	(n)	(2n)
Ixeris dentata Nakai var. *dentata*	21	Wakkanai Hokkaido			
var. *albiflora* f. *amplifolia* Hiyama			Nishioka, 1956, 1960		21
Picris hieracioides L. ssp. *japonica* Krylov (=*P. japonica* Thunb.)	10	Sokuryo-yama Muroran, Hokkaido	Ishikawa, 1916 Nishioka, 1956	5	 10
ssp. *kamtschatica* (Ledeb.) Hult. (=*P. japonica* var. *alpina* Ohwi)	10	Cultivated in Bot. Gard. Sapporo	Nishioka, 1956		10
Lactuca Raddeana Maxim. var. *elata* (Hemsl.) Kitam.	18	Sokuryo-yama, Muroran, Hokkaido	Ishikawa, 1916 Nishioka, 1956	9	 18
Aster scaber Thunb.	18	Sokuryo-yama, Muroran, Hokkaido	Huziwara, 1957		18
Eupatorium Glehni Fr. Schm.	20	Sokuryo-yama, Muroran, Hokkaido	——		

report (Huziwara, 1957). However, it is noteworthy that a heterogenous chromosome pair was found in the complement, i. e., an extroadinary small chromosome occurs there.

$$K(2n)=18=2A^{sm}+2B_1^{sm}+2B_2^{m}+2B_3^{m}+2C_1^{sm}+2C_2^{sm}+2D_1^{sm}+1D_2^{sm}+2^{cs}D_3^{m}+1E^{st}$$

6. *Eupatorium Glehni* Fr. Schm. (Fig. 8 & 10)

Twenty somatic chromosomes were counted. The two shortest pairs possess small subterminal short arms and are characteristic of the complement.

The karyotype formula is as follows:

$$K(2n)=20=4A^{sm}+2B_1^{st}+2B_2^{sm}+2C_1^{st}+4C_2^{st}+2C_3^{st}+4D^{st}$$

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摘　　要

最近染色体に関する知識の増加に伴い，分類学的考察を行う際にも此等の data が加味される様になりつゝある。本報を通じて，邦産植物の染色体数，核型等を断片的ではあるが，出来るだけ外部形態上の変異及び生態的立地にも注意を払い，報ずる事にする。同一種類でもさらに多くの地域から集められた材料をもとにして，比較検討される事が必要であろう。

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